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CENTRAL INTELLIGENCE AGENCY

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COUNTRY China

DATE DISTR. 12 March 1954

SUBJECT Locations of Petroleum, Oil Shale and Natural Gas Resources/Yümen and other Oil Fields/Refineries

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1. China's Geologically Surveyed Petroleum Deposits Which Are Considered Very Promising:

a. In 1948 the Chinese Nationalist Government believed that China's most favorable petroleum areas were to be found in the area encompassed by the Provinces of Sinkiang, Tsinghai, Kansu and Shensi. [redacted] oil prospects in Sinkiang, Tsinghai and Kansu are the most favorable of any other area of China. Although oil seepage occurs in scattered areas throughout northwest and north central China, The CPC's /Chinese Petroleum Corporation/ geological surveys have indicated that petroleum prospects were most favorable in the following areas: 50X1

(1) Chingtsaowan, Kansu Province (a few kms southwest of Chihkinpu)
(2) Tahunchuan, Kansu Province (one-third of the way from the Yümen oil field to Kiuchuan (Suchow))
(3) Wenshushan, Kansu Province (10 to 20 kms south of Kiuchuan)
(4) Minho, Tsinghai Province (very close to the Kansu border)
(5) Tsaha Tsiaoto, Tsinghai Province (near the Sinkiang, Tsinghai and Kansu borders)
(6) Tseliuching, Szechwan Province

b. Of the above the most likely fields that the Chinese Communists might exploit in the future, if they have not done so already and if no new unusually good fields are discovered in the meantime, are Chingtsaowan, Tahunchuan, Wenshushan, Minho and Tsaha Tsiaoto. Although Wenshushan is considered to be by far the largest deposit, it is rather broken. The most favorable from the geological standpoint is Chingtsaowan. Minho is the most shallow field, the oil deposit being approximately 1,000 to 1,500 feet below the surface of the earth. The plans of the CPC called for Chingtsaowan and Minho to be the first two of the above six favorable petroleum areas to be drilled. Their schedule called for drilling operations to begin at these two fields in 1948, however, this had to be postponed for lack of adequate funds. Oil was discovered at Tseliuching by the Chiu Ta Chemical Works in 1947 when drilling a salt water well. It is believed that this deposit is a small one.

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2. Producing and Abandoned Oil Fields:

50X1 a. Yümen or Laochunmiao (Kansu):

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b. Tushantzu or Wusu (Sinkiang): The grade of crude oil at Tushantzu is much higher than that of Laochunmiao (Yümen), however, the production per well is much lower. A well at Tushantzu producing one ton of crude oil per day was considered to be a very good producer, whereas at Laochunmiao if a well produced less than three tons it was shut-in. This oil field was officially known as the Tushantzu oil field rather than Wusu. It was under the jurisdiction of the KPA /Kansu Petroleum Administration/ for only one year, between 1943 and 1944. Prior to and after that period the Soviets were in full control of the crude oil production and refining at Tushantzu.

c. Yenan, Yungping and Yenchang (Shensi): These three fields are not too far apart. The Standard Oil Company originally drilled six or seven shallow wells there in perhaps 1910. In 1935 Yen Shuang, later Vice President of the CPC, personally headed an exploration team to these three fields. The drilling operations at that time resulted in very little oil. In 1944 to 1945, when the Chinese Communists moved into this territory, the annual production of these three fields was approximately four thousand barrels.

d. Fuhsin (Jehol): The Japanese drilled from 30 to 100 wells here prior to 1941, but the Chinese Nationalist Government never resumed the operation because the production was too low to be profitable. The abandoned equipment was later dismantled and shipped to Southeast Asia.

50X1 e. Kweiting (Kweichow): old oil well here, consisting of a shaft 100 to 125 feet deep and six to seven feet in diameter, which had been abandoned for some time. The oil at Kweiting occurs in limestone.

3. The Laochunmiao Oil Field (Kansu):

a. Name and Location: Laochunmiao is frequently also referred to as the Yümen oil field, although the former is its official name. It is located about 60 kms south of Yümen and several kms south and approximately 80 kms west of Kiuchuan (Suchow). All communication with Laochunmiao oil field is carried on not through Yümen but via Kiuchuan.

b. History: This field was first discovered in 1938 by members of the KPA. The actual production did not start until about February 1939.

c. Managing Organization and Top Administrative Personnel: From 1938 to 1946 Laochunmiao was under the direction of the KPA of the NRC /National Resources Commission of China/. In 1946 the KPA and the Szechwan Exploration Corps were merged and formed under the NRC into the CPC. The four main functional divisions of CPC were General Affairs, Finance and Accounting, Sales and Purchasing, and
50X1 Transportation. At Laochunmiao following nine departments: General Affairs (Administrative and personnel branches plus the maintenance of a hospital, police force, school and other miscellaneous employee facilities such as cafes, groceries, tailor shops, etc); Sales and Purchasing; Finance and Accounting; Transportation; Mechanical and Electrical; Civil and Architectural; Exploration; Production and Refining. In 1948 the top petroleum people in China were Wong Wen-hao, Premier and Head of the Executive Yuan; Sun Yueh-ch'i, Chairman of the NRC; Wu Chao-hung, Secretary General of the NRC; T K Chang, President of the CPC; and the four Vice Presidents of the CPC, K Y King, Kuo Ke-chuan, Yen Shuang and Tsou Ming. In September 1948 Tsou Ming replaced Kuo Ke-chuan as Manager of the Kansu-Tsinghai Branch of the CPC, which had under its jurisdiction the Laochunmiao oil field. Of the above named top Chinese administrative personnel in the petroleum field all but T K Chang and K Y King remained in China when the Communists took over the country.

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d. Petroleum and Other Personnel: 50X1 1946 was the peak year of activity and for the number of workers employed there. 50X1 In 1946 the total number of KPA employees was slightly over ten thousand. This number included not only the employees who were located at Laochunmiao but also those who were stationed at the KPA headquarters in Chungking and others who maintained repair and supply facilities between Laochunmiao and Chungking. After the CPC was organized in 1946, the total number of employees dropped considerably. The greater portion of KPA, and later the CPC, employees however, were located at Laochunmiao. The entire population of the KPA constructed village of Laochunmiao, excluding the relatives and dependents of the workers, was employed by the organization. Therefore, the total number of employees included not only skilled and unskilled laborers of all sorts, and administrative and clerical personnel, but also farmers, shopkeepers, tailors, etc. In September 1948 the Production Department at Laochunmiao had a total of approximately 400 workers. Of this number about 60 were drilling and production engineers, who were divided into three drilling teams. The Refining Department also had approximately 60 engineers. There were six US employees at Laochunmiao -- three drilling, two refining, and one production engineer.

e. Exploration Data and Size of Field: The oil at Laochunmiao occurs in the anticlinal structure of Tertiary Age. The so-called K sand is from 400 to 600 feet below the surface of the earth and the main producing sand, or L sand, is at 50X1 a depth of from 1,000 to 1,700 feet. 50X1 50X1 One blow-out at Laochunmiao was estimated to flow 960,000 gallons of crude oil in 24 hours. 50X1 50X1 the oil field covers an area of approximately 4,800 50X1 acres. Of all the wells drilled at Laochunmiao, only one was dry. It was drilled in 1948 in an attempt to find the limits of the field.

f. Number of Abandoned, Producing and New Wells: In September 1948 there were about 10 abandoned and 35 producing wells at Laochunmiao. Of the 35 producing wells at least 20 were new, less than two years in production.

g. Description and Number of Drilling Rigs and Other Petroleum Equipment: Laochunmiao, in 1948, had a total of four drilling rigs. Three of these were of US manufacture, having been purchased from the National Supply Company, and 50X1 one of German manufacture. 50X1 The German drilling rig was very old and badly in need of repairs and was therefore not being used in 1948. Other than the above there were no other major pieces of equipment at Laochunmiao, just small quantities of US and local manufactured trivial equipment and tools.

h. Production Practices and Quality and Quantity of Production: All wells at Laochunmiao were flowing wells and not of the pumping variety. The gravity 50X1 of crude oil produced at Laochunmiao was 33 API degrees. 50X1 50X1 the annual production figures for China on page 74 of the 15 Aug 53 issue (International Operations Issue) of World Oil are actually those of Laochunmiao, as at that time there were no other significant producing fields, and are accurate and reliable up to the year 1949. It is obvious that the figures for the year 1949 and for subsequent years are merely an estimate and probably not a very good one. Production is bound to vary from year to year for any number of reasons, excluding the drilling of new wells and the abandonment of depleted ones, and would certainly not be identical, or nearly so, for four years in a row.

i. Storage and Refining Facilities: A very small percentage of the crude oil production at Laochunmiao was actually stored. As the refinery was located

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on the north edge of the field, about one km north of the last well and on a lower level than the wells, most of the daily crude oil production was piped, through a four inch pipe, to the refinery. Some crude oil was stored in above-ground steel tanks, their total combined capacity being at most ten thousand barrels. There were two large storage tanks, with a capacity of two thousand barrels each, and a number of smaller ones. One large storage tank was located near the old refinery (topping units) and one at the new refinery (thermo-cracking unit). The smaller ones were scattered throughout the field. In September 1948 another large storage tank, this one with a capacity of over two thousand barrels, was being constructed near the new refinery.

j. Type and Size of Refinery and Products Refined: The Laochunmiao refinery consisted of one thermo-cracking unit, with a capacity of one thousand barrels a day, and two topping units, with a combined capacity of from 1,000 to 1,500 barrels a day. In September 1948, 35% of the crude oil processed through the thermo-cracking unit went into the production of gasoline. The products, and the percentage of the total production devoted to them, refined by the two topping units were: diesel oil - 25 to 30%, fuel oil - 20 to 25%, kerosene - 20 to 25%, gasoline - 18 to 20%, paraffine wax - less than 5%, lubricating oil - less than 5%. In September 1948 there was no aviation gasoline being refined at Laochunmiao, or anywhere else in China. The natural gas production of Laochunmiao was from 400 to 700 cubic feet per barrel of oil produced. This was all used locally as fuel for heating boilers and living quarters and for other domestic uses such as cooking.

k. How and Where Refined Products were Transported: In September 1948 there was no pipeline or railroad anywhere near Laochunmiao, therefore all of the refined products had to be transported by truck in drums whose capacity was 50 to 55 gallons each. Most of the trucks assigned to the oil field were three ton Chevrolets, 500 were delivered in 1943, capable of carrying a total of 18 drums each. We also had a few 4½ ton Dodge trucks that could carry 27 drums each. Throughout World War II most of the Laochunmiao production was transported to Chungking. The trucks consumed one-third to two-thirds of their total load of gasoline on each round trip between Laochunmiao and Chungking. A very small percentage of the production during that period was also transported to various points in Sinkiang, Kansu and Shensi Provinces. After the end of World War II and up to September 1948 all of the Laochunmiao production was used in the northwestern provinces of China.

4. Refineries: The following are the only other refineries, in addition to the ones at Laochunmiao and Tushantzu, that [redacted] existed in China in the latter part of 1948:

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a. The Japanese were building a ten thousand barrel a day refinery in Shanghai, at Kaochiao, but did not quite complete it when World War II ended. The Chinese Nationalist Government did not attempt to complete its construction. It would not be a difficult task for the Chinese Communists to put this refinery into operation.

b. Another modern refinery was under construction by the Japanese during World War II at Chinhsi in Manchuria. [redacted] it was to be much larger than the Kaoshiung (Takao) refinery on the Island of Formosa. The daily capacity of the Kaoshiung refinery is from six thousand to ten thousand barrels a day. Therefore, the Chinhsi refinery was to have had a capacity of well over ten thousand barrels a day. It was not completed prior to the Japanese surrender and nothing was done to it by the Chinese Nationalist Government. In 1948 when the Chinese Nationalist forces withdrew from Manchuria they dismantled and shipped most of this refining equipment to Taiwan, where it was utilized at the Kaoshiung refinery.

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50X1 c. another large refinery that was being built by the Japanese at Yungchi, in the Chilin Province of Manchuria. The Chinese Nationalist Government attempted to complete this refinery, but had not done so by 1948. It was not dismantled when the Chinese Nationalist forces withdrew from Manchuria.

5. Oil Shale Deposits:

a. Fushun (Manchuria): the largest known deposit of oil shale in China is at Fushun in Manchuria. It was said that the oil shale 50X1 of Fushun is five billion four hundred million (5,400,000,000) tons. The total oil shale reserve in Manchuria is estimated to be sixty billion (60,000,000,000) tons. The oil shale deposit at Fushun is unique in that it occurs directly above the coal seam of the Fushun coal mine. This coal is lignite and the seam is 180 meters thick, an unusually thick seam for China or any other country. Therefore, the over-all operation of extracting and processing this oil shale is a very economic one because the shale has to be removed anyway to mine the coal. The Japanese were processing this oil shale and their schedule called for the production of eight hundred thousand (800,000) tons of oil per year by 1948.

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50X1 b. Pingyueh (Kweichow): The only other oil shale deposit in China
50X1 is the one that was discovered near Pingyueh in Kweichow Province. not know the size of this deposit.

6. Natural Gas Fields: The CPC owned two natural gas fields in the Szechwan basin. One is called Shengtengshan and is located at Lungchang. The other is Shihyiukou near Chungking. These are the oldest natural gas fields in the world, there already being over ten thousand wells there prior to the year 1700.

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